

ABSTRACT OF THE DISCLOSURE

A method for manufacturing high-quality Mn-doped nanocrystals is provided. The method generally comprises the steps of: (a) combining an organometallic manganese precursor with an organometallic Group II precursor and an organometallic Group VI precursor to provide a precursor mixture; (b) diluting the precursor mixture with a dilution solvent to provide an injection mixture; (c) heating a coordinating solvent; (d) stirring the heated coordinating solvent; and (e) injecting the injection mixture into the heated coordinating solvent while the heated coordinating solvent is being stirred. The invention is particularly useful for manufacturing high-quality, Mn-doped zinc selenide (ZnSe) nanocrystals, high-quality, Mn-doped zinc sulfide (ZnS) nanocrystals, and high-quality, Mn-doped zinc telluride (ZnTe) nanocrystals.